

Claims

1. An organic crystal working method in which an organic crystal is worked by irradiation with short-pulse laser light, wherein working is performed in a state in which the portion of this organic crystal being worked is cooled to a low temperature.
2. An organic crystal working method in which an organic crystal is worked by irradiation with short-pulse laser light, wherein working is performed in a state in which the portions of this organic crystal and a substance holding this organic crystal that are being worked are cooled to a low temperature.
3. The organic crystal working method according to Claim 1 or 2, wherein the state in which the crystal is cooled to a low temperature is 0°C or below.
4. The organic crystal working method according to Claim 1 or 2, wherein the method for maintaining the portion of the organic crystal that is being worked or the portions of the organic crystal and the substance holding this organic crystal that are being worked in a low-temperature state is a method in which a low-temperature gas is caused to jet directly or indirectly onto an area that includes the portion(s) where this low-temperature state is to be maintained.

5. The organic crystal working method according to Claim 3, wherein the low-temperature gas is either a nitrogen gas or helium gas.
6. The organic crystal working method according to Claim 1 or 2, wherein the organic crystal is at least one crystal selected from a set consisting of organic low molecules, organic supramolecular complexes, resins, proteins, sugars, lipids and nucleic acids.
7. The organic crystal working method according to Claim 1 or 2, wherein the form of working is working that is performed from the surface of the organic crystal or the surfaces of the organic crystal and the substance holding this organic crystal.
8. The organic crystal working method according to Claim 1 or 2, wherein the wavelength of the short-pulse laser light is shorter than the absorption end on the short-wavelength side of the organic crystal.
9. The organic crystal working method according to Claim 1 or 2, wherein the wavelength of the short-pulse laser light is 400 nm or less.
10. The organic crystal working method according to Claim 1 or 2, wherein the pulse width of the short-pulse laser light is 100 ns or less.

11. The organic crystal working method according to Claim 1 or 2, wherein the energy density per pulse of the short-pulse laser light is 1 mJ/cm² or greater.

12. An organic crystal working apparatus for working organic crystals, wherein this organic crystal working apparatus has a short-pulse laser, an optical system which conducts the short-pulse laser light emitted from this short-pulse laser to an organic crystal constituting the object of working, and which irradiates the location of this organic crystal that is being worked, a mechanism that varies the relative positions of the optical system and the organic crystal, and a means for cooling the object of working to a low temperature.

13. The organic crystal working apparatus according to Claim 12, wherein the means for maintaining the object of working in a low-temperature state is a means in which a low-temperature gas is caused to jet onto the organic crystal or a container holding this organic crystal in a position where this organic crystal is being worked.

14. The organic crystal working apparatus according to Claim 12, wherein the means for maintaining the object of working in a low-temperature state is a cooling container that accommodates the organic crystal or a container holding this organic crystal in a position where this organic crystal is being worked.

15. The organic crystal working apparatus according to Claim 12, wherein this organic crystal working apparatus has an observation device or measuring device for observing or measuring the position where the short-pulse laser light is irradiated, simultaneously with the organic crystal.

16. The organic crystal working apparatus according to Claim 15, wherein the observation device or measuring device is an optical observation device or optical measuring device using visible light, this observation device or measuring device is in a mechanically fixed relationship with the optical system, the reference point of the observation device or measuring device coincides with the position where the short-pulse laser light is irradiated, and the apparatus has the function of indirectly observing or measuring this short-pulse laser light irradiation position by observing or measuring the position of the reference point of the observation device or measuring device.

17. An organic crystal observation device, wherein the organic crystal working apparatus according to Claim 12 is incorporated.

18. The organic crystal observation device according to Claim 17, wherein the observation device is an X-ray crystal structure analysis device.